

Catalogue of the Type Specimens of Amphibians and Reptiles in the Herpetological Museum of the Chengdu Institute of Biology, Chinese Academy of Sciences: V. Viperidae (Reptilia, Serpentes)

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Abstract In China, there are about 37 species of vipers belonging to 12 genera in the family Viperidae. In the Herpetological Museum of the Chengdu Institute of Biology (CIB), Chinese Academy of Sciences, the type specimens of snakes represent seven species in four genera. As a series of reports on the type specimens of Amphibians and Reptiles deposited in the Herpetological Museum of CIB, this paper focuses on the venomous snake family Viperidae in the collections at this Museum.

Keywords snake, type specimen, Viperidae, China, taxonomy

As a series of reports on the type specimens of Amphibians and Reptiles deposited in the Herpetological Museum of the Chengdu Institute of Biology (CIB), Chinese Academy of Sciences (CAS), this paper will focus on the serpent family Viperidae. The Viperids are advance snakes under the Serpentes. There are currently 12 genera and 37 recognized species in China (Uetz and Hošek, 2015). In the CIB collection, the type specimens of Viperidae belong to seven species in four genera.

In recent years, Asian pit vipers attracted many herpetologists to study their systematics, biogeography and evolution, and considerable work has been published on the topic (e.g. Malhotra and Thorpe, 2004; Guo *et al.*, 2007; Malhotra *et al.*, 2011). Ongoing studies based on more extensive sampling, allowed several new taxa to be described successively (e.g. Guo and Wang, 2011; Yang *et al.*, 2011). In order to benefit the scientists interested in the systematics of this group, it is necessary to provide a list of the type specimens in the museum, and some of the Amphibian and Reptile type catalogues have already

been published (e.g. Guo *et al.*, 2012; Xiong *et al.*, 2012). Some data on body dimension and scalation characters are also provided (Tables 1–5). The abbreviations used in the tables are: SVL: snout-ventral length; TL: tail length; SPL: supralabial; IFL: infralabial; DS: Dorsal scale; VS: Ventral scale; SC: Subcaudal scale.

Gloydius shedaoensis (Zhao, 1979)

Published name: *Agkistrodon shedaoensis* Zhao, 1979. Acta Herpetol Sin, Chengdu, [old ser.], 1(1): 4–6.

Holotype: CIB 012816 (formerly CIB 79I0005), Male. (Figure 1)

Type locality: Snake Island, Lüshun, Liaoning Province, China.

Distribution: Snake Island, Lüshun, Liaoning Province, China

Other specimens (43): Snake Island, Lüshun, Liaoning (CIB series 012817–46, 012952, 072426, 072550, 078098–99, 083863–70).

Ovophis monticola zhaokentangi Zhao, 1995

Published name: *Ovophis monticola zhaokentangi* Zhao, 1995. Sichuan J Zool, Chengdu, 14(3): 109.

Paratype: CIB 740003, Male; Pianma, Lushui Co., Yunnan Province; 1980 m; 3. 17, 1974.

Comments: This specimen is unaccounted for loss in the CIB collection. Malhotra *et al.* (2011) synonymized *O.*

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Table 1 The body dimension and measurement of the type specimens of *Ovophis zayuensis*.

Specimens	Locality	Sex	SVL	TL	SPL	IFL	DS	VS	SC
CIB013375	Chayu, Xizang	♂	563	100	9	9	23-23-19	175	53
CIB013376	Chayu, Xizang	♀	570	100	10	11/13	24-23-19	174	52
CIB013377	Chayu, Xizang	♂	-	-	9	9/10	24-23-19	-	-

Table 2 The body dimension and measurement of the specimens of *Probothrops mangshanensis* (from Zhao *et al.*, 1998).

Specimens	Locality	Sex	SVL	TL	SPL	IFL	DS	VS	SC
CIB 098485	Mangshan, Hunan	J	310	60	8	14/15	25-25-17	196	58
CIB 013330	Mangshan, Hunan	J	379	65	7	15/14	25-25-17	195	60
CIB013331	Mangshan, Hunan	J	-	-	7	14	25-25-17	188	66
CIB013332	Mangshan, Hunan	J	-	-	7/8	13	25-25-17	187	63
CIB013333	Mangshan, Hunan	J	-	-	7	14/13	25-25-17	193	63
CIB013334	Mangshan, Hunan	J	-	-	7	13/15	25-25-17	198	62
CIB013335	Mangshan, Hunan	J	-	-	7	13/14	25-25-17	195	61
CIB013336	Mangshan, Hunan	J	-	-	8/7	14	25-25-17	188	67
CIB013337	Mangshan, Hunan	J	-	-	7	14	25-25-17	193	67
CIB013338	Mangshan, Hunan	J	-	-	7	14	25-25-17	187	64

Table 3 The body dimension and measurement of the type specimens of *Probothrops xiangchengensis* (from Zhao, Jiang and Huang, 1978).

Specimens	Locality	Sex	SVL	TL	SPL	IFL	DS	VS	SC
CIB013916	Xiangcheng, Sichuan	♂	520	90	7	13/12	23-25-17	189	59
CIB013917	Xiangcheng, Sichuan	♀	815	135	8	11/13	25-25-17	192	59
CIB013918	Xiangcheng, Sichuan	♀	600	125	7	12	25-25-17	191	66
CIB013919	Xiangcheng, Sichuan	♀	750	120	8	13/11	24-25-17	194	56
CIB013920	Xiangcheng, Sichuan	♀	-	-	8	12/14	25-26-17	192	-
CIB013921	Xiangcheng, Sichuan	♂	757	123	7	11/12	25-25-17	194	59
CIB013924	Jiulong, Sichuan	♀	647	113	10	12/13	23-25-17	182	52
CIB013925	Jiulong, Sichuan	♀	709	115	8	12	21-24-17	184	49
CIB013926	Jiulong, Sichuan	♀	630	100	9	12	23-25-17	190	51
CIB013927	Jiulong, Sichuan	♀	675	100	9	13	23-25-17	188	48+
CIB013928	Jiulong, Sichuan	♀	618	109	9	13	23-25-17	190	57
CIB013929	Jiulong, Sichuan	♀	670	110	8	12	23-23-17	193	55
CIB013930	Jiulong, Sichuan	♂	568	112	8	12	23-25-17	177	54
CIB013931	Jiulong, Sichuan	♀	640	90	8	12	23-24-17	189	46
CIB013932	Jiulong, Sichuan	♂	590	120	8	11	23-23-19	180	59
CIB013933	Jiulong, Sichuan	♀	580	100	8	12	23-25-18	184	52
CIB013934	Jiulong, Sichuan	♂	665	135	8	12	23-25-17	180	61
CIB013935	Jiulong, Sichuan	♂	645	135	-	-	23-25-17	-	-
CIB013937	Jiulong, Sichuan	♀	780	100	8	11/12	23-25-17	188	53
CIB013938	Jiulong, Sichuan	♀	670	120	9	11/12	23-25-19	188	61
CIB013939	Jiulong, Sichuan	♀	625	110	9/8	12	23-24-17	191	59
CIB013940	Jiulong, Sichuan	♀	655	105	9/8	12	23-24-17	185	53
CIB013941	Jiulong, Sichuan	♀	680	110	-	-	-	190	52
CIB013942	Jiulong, Sichuan	♀	620	110	8	10/12	23-23-17	190	54
CIB013943	Jiulong, Sichuan	♀	580	100	8/9	12	23-23-17	185	49
CIB013944	Jiulong, Sichuan	♀	685	115	9	13/11	24-25-19	186	59
CIB013945	Batang, Sichuan	♂	894	166	9	13	23-25-17	197	58
CIB013947	Jiulong, Sichuan	♀	-	-	9	12	24-25-17	187	-
CIB013948	Jiulong, Sichuan	♀	695	120	10	13	23-25-17	188	58
CIB013949	Jiulong, Sichuan	♀	645	115	8/9	11/13	23-24-18	185	55

monticola zhaokengtangi with *O. zayuensis*.

***Ovophis zayuensis* (Jiang, 1977)**

Published name: *Trimeresurus monticola zayuensis* Jiang, 1977 *in* Zhao E. M. and Jiang Y. M. 1977. *Acta Zool Sin, Peking*, 23(1): 64–71.

Holotype: CIB 013375 (formerly CIB73I5024), Male. (Figure 2)

Type locality: Chayu Co., Xizang AR, China.

Allotype: CIB 013376, Female.

Other specimens (1): Chayu Co., Xizang (CIB 013377).

Distribution: Xizang (Chayu and Motuo), Yunnan (Gongshan), China.

Comments: Zhao (1995) elevated this taxon to a full species. Malhotra *et al.* (2011) synonymized *O. monticola zhaokengtangi* with *O. zayuensis*.

***Protobothrops mangshanensis* (Zhao, 1990)**

Published name: *Trimeresurus mangshanensis* Zhao E. M. *in* Zhao E. M. and Chen Y. H. 1990. *Sichuan J Zool*. Chengdu, 9(1): 11–12.

Nootype: CIB 098485, Juvenile male (Figure 3)

Type locality: Pingkeng, Mt. Mang, Yizhang Co., Hunan Province, China; 700–900 m.

Paratype: CIB 013330, Juvenile.

Distribution: Hunan and Guangdong Province, China

Other specimens (9): Yizhang Co., Hunan Province, China (CIB series 01331–38, 078632).

Comments: The holotype has been got lost, thus Guo *et al.* (2012) designated a nootype for this species. This species is currently listed as Endangered (EN) under IUCN Red List Criteria (IUCN, 2012).

***Protobothrops xiangchengensis* (Zhao, Jiang and Huang, 1978)**

Published name: *Trimeresurus xiangchengensis* Zhao, Jiang and Huang, 1978. *Mater Herpetol Res*, Chengdu, 4: 21.

Holotype: CIB 013918 (formerly CIB725050), Male. (Figure 4)

Type locality: Qianjing Town, Xiangcheng Co., Sichuan Province, China.

Allotype: CIB 013921, Female.

Distribution: Western Sichuan and Yunnan, China.

Other specimens (77): Xiangcheng Co., Sichuan (CIB series 013916–17, 013919–20, 013922–23, 072443); Jiulong Co., Sichuan (CIB series 01392–35, 013937–44, 013946–49, 097452–55); Kangding Co., Sichuan (CIB 013936); Batang Co., Sichuan (CIB 013945); Xiaojing Co., Sichuan (CIB 072442); No detail locality (CIB series 083934–72).



Figure 1 Dorsal (A) and ventral (B) views of the holotype of *Gloydius shedaensis* (Zhao, 1979) (CIB 012816).



Figure 2 Dorsal (A) and ventral (B) views of the holotype of *Ovophis zayuensis* (Jiang, 1977) (CIB 013375).



Figure 3 Dorsal (A) and ventral (B) views of the holotype of *Protobothrops mangshanensis* (Zhao, 1990) (CIB 098485).

***Viridovipera medoensis* (Zhao, 1977)**

Published name: *Trimeresurus medoensis* Zhao, 1977 *in* Zhao E. M. and Jiang Y. M. 1977. *Acta Zool Sin, Peking*, 23(1): 64–71.

Holotype: CIB 013612 (formerly CIB 73II5208), Male. (Figure 5)

Type locality: Near A-ni Bridge, Motuo Co., Xizang AR, China.

Allotype: CIB 013611, Male.

Distribution: Motuo Co., Xizang, China.

Comments: Malhotra and Thorpe (2004) moved this species from *Trimeresurus* to the newly erected genus *Viridovipera* as *V. medoensis*.

***Viridovipera stejnegeri chenbihuui* (Zhao, 1995)**

Published name: *Trimeresurus stejnegeri chenbihuui* Zhao, 1995. Sichuan J Zool, Chengdu, 14(3): 107–112.

Holotype: CIB 013898 (formerly CIB 64III5599), Male. (Figure 6)

Type locality: Diaoluoshan, Lingshui Co., Hainan Province, China.

Allotype: CIB 013891, Female.

Distribution: Hainan, China.

Other specimens (28): Lingshui Co., Hainan (CIB series 013885–89, 013894–897, 013899–913, 013915); Qiongzhong, Hainan (CIB series 013888, 013890, 013892–93, 013914, 078044).

Comments: Malhotra and Thorpe (2004) moved the species *Trimeresurus stejnegeri* to the newly described genus *Viridovipera* as *V. stejnegeri chenbihuui*. This subspecies is maybe not a valid subspecies based on recent phylogenetic studies (Guo *et al.* unpubl. data)

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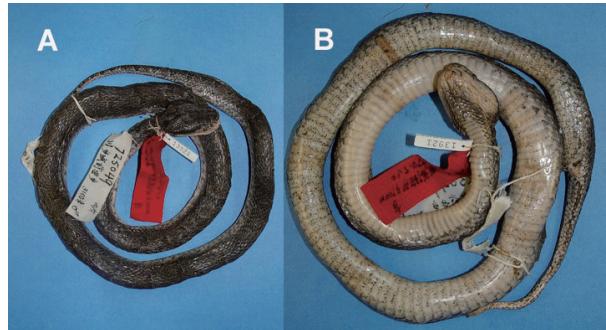


Figure 4 Dorsal (A) and ventral (B) views of the holotype of *Protobothrops xiangchengensis* (Zhao, Jiang and Huang, 1978) (CIB 013918).

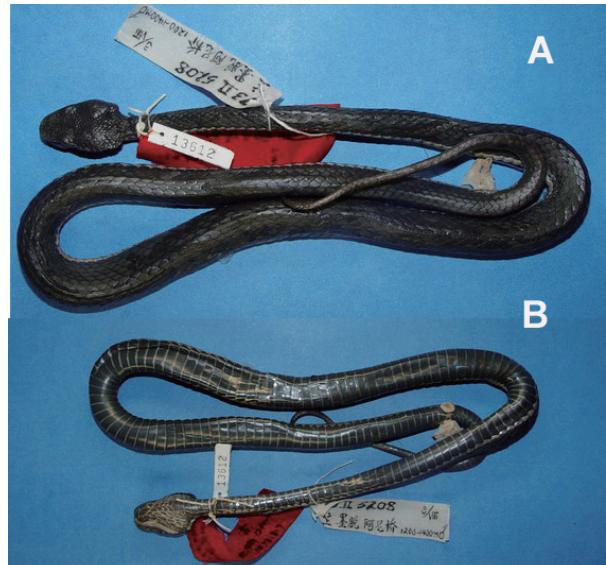


Figure 5 Dorsal (A) and ventral (B) views of the holotype of *Viridovipera medoensis* (Zhao, 1977) (CIB 013612).



Figure 6 Dorsal (A) and ventral (B) views of the holotype of *Viridovipera stejnegeri chenbihuui* (Zhao, 1995) (CIB 013898).

Table 4 The body dimension and measurement of the type specimens of *Viridovipera medoensis* (from Zhao and Jiang, 1977).

Specimens	Locality	Sex	SVL	TL	SPL	IFL	DS	VS	SC
CIB 013612	Motuo, Xizang	♂	563	129	8	9	17-17-13	149	59
CIB 013611	Motuo, Xizang	♂	509	115	8	9	17-17-13	148	58

Table 5 The body dimension and measurement of the specimens of *Viridovipera stejnegeri chenbihuii*.

Specimens	Locality	Sex	SVL	TL	SPL	IFL	DS	VS	SC
CIB013885	Lingshui, Hainan	♂	595	150	9/11	14/12	21-21-15	174	73
CIB013886	Lingshui, Hainan	♂	600	150	11	13/14	21-21-15	170	73
CIB013887	Lingshui, Hainan	♂	605	145	12	14/13	21-21-15	177	73
CIB013888	Qiongzhong, Hainan	♂	595	145	11	14/13	23-21-15	174	75
CIB013889	Lingshui, Hainan	♂	595	145	11	13	21-21-15	171	73
CIB013890	Qiongzhong, Hainan	♂	610	150	11	12/13	21-21-15	172	73
CIB013891	Lingshui, Hainan	♀	545	75	10/11	14	21-21-15	173	67
CIB013892	Qiongzhong, Hainan	♂	656	167	11	13	21-21-15	173	77
CIB013894	Lingshui, Hainan	♀	537	108	11	12	21-21-15	171	66
CIB013896	Lingshui, Hainan	♂	518	122	12	13	21-21-15	170	72
CIB013897	Lingshui, Hainan	♂	570	130	12	13/12	21-21-15	172	71
CIB013898	Lingshui, Hainan	♂	565	150	11	12	21-21-15	171	80
CIB013903	Lingshui, Hainan	♂	580	150	10/11	14/13	21-21-15	169	74

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